Global Advanced Research Journal of Educational Research and Review (ISSN: 2315-5132) Vol. 2(2) pp. 026-030, February, 2013
Available online http://garj.org/garjerr/index.htm

Full Length Research Paper

The level of malnutrition of students in primary and secondary schools in Edo State: implication's on academic performance

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Accepted 19 November, 2012

The study the level of malnourishment of students in primary and secondary schools in Edo state was carried out in Esan west local government area of Edo state. The study becomes necessary owing to the enormous investment of government in education and unimpressive output in the performance of students in the Nation National Exams like NECO and WAEC to explore other reasons among other for the poor performances. The population of the study comprised of 6909 students out which a sample of 500 was randomly selected. Three hypotheses were formulated and tested in the study. Data were generated by weighing the students and comparing their weight with the standard weight of pupils by age. The results revealed that pupils were generally malnourished between -30- -75kg weight deficits as against their age counterpart in developed countries. The male pupils suffer more malnourishment than the female students. Within schools malnourishment is not significant but between schools. The study recommended in-school feeding and suggested salary and wages increased to ameliorate this problem.

Keyword: Level of Malnutrition in Primary and Secondary Schools

INTRODUCTION

Malnutrition has been defined as the cellular imbalance between supply of nutrients and energy and the body's demand for them to ensure growth maintenance and specific functions. It is simply refers to as a medical conditions caused by an improper or insufficient diet (Ebuehi, 2012). According to Sawaba (2006) malnutrition occurs when hunger goes on in such intensity and for such a long time period of time that they start to interfere in the body's energy supply. Serious malnutrition can cause neurological impairment which can cause physical and mental deficiencies that could jeopardize learning. The study of Dobbing (1972) has shown that serious malnutrition cases can cause the changes in the central nervous system (responding for the intellectual function of the individuals) that fall upon the brain anatomy reduction of the weight, size volume , number of cell amount of myelin. In Nigeria poor academic performance of students have majorly been blamed on the following factors; lack of commitment by teachers/ incompetence's, teacher teaching method school location , poor / falling standard of education. Little attention has been paid to family socio-economic factor responsible for among other things the supply of adequate nutrition responsible for cognitive development of the child. To this end several teaching methods have been researched and suggested to improve the academic performance of students, yet the

outcry of poor academic performance by the parents and citizenry continue unabated. This was reported by West Africa Examination Council (WAEC) and National Examination Council (NECO) and corroborated by Olusi (2009) comparing students performance in the science subject areas in Esan west local government area of Edo state noted that the f ratio value of 43.49 obtained was not significant meaning that no appreciable improvement in the result of students. According to Caldes and Ahmed (2004) the impact of in school meal on learning appears to operate both through better learning efficiency while in school. Nigeria adult population comprises of majorly people whose wages hardly give them three square meals in all the thirty days in a month. According to expenditure survey over 50% of the household in the country live below poverty line. Poverty has been found out to be the main cause of malnutrition in Nigeria (Ebuehi, 2012). Little wonder the Academic Staff Union of Universities (ASUU) slogan ''take home can't take me home'' leave much room to desire of salary and wages in Nigeria the question that is begging for answer is, how many homes of civil servants and private entrepreneurs' can afford the basic need grocery package idealised by law in developed nations of the world. To Sadley (2006) the basic grocery need for four person per day include 6kg of meat; 4kg of beans; 3kg of rice, 7.5litre of milk; 1.5kg; of wheat flour; 6kg of potatoes 9kg of tomatoes; 6kg of tread; 60mg of coffee; 3kg of sugar; 750g of oil butter and 7.5 dozen of banana. According to research study of Tavas (2005) food insufficiency is a serious problem affecting children ability to learn. Offering in healthy breakfast is an effective measure to improve academic performance and cognitive functioning among undernourished population. Over the years male students have been described to be better in subjects involving extraneous scientific calculations. This was revealed in the study of Olusi (2006) who asserts that the male students perform better in mathematics and physics in WAEC and NECO examinations. And that school location which is responsible for school type, infrastructure and the availability of teaching materials and qualified teachers has proved to be responsible for students' performance. Though some result have prove otherwise, but the question is how a pschool without adequate facilities for effective teaching and learning provide good results if examination malpractices were not indulge in by candidates.

Statement of the Problem

Better nutrition has been shown to have an impact on both cognitive and spatial memory / academic performance Children with histories of either type of malnutrition confined to infancy had significantly lower scores on the national high school examination than healthy comparison children. The Nigeria national minimum wage of #18,000:00 which some states of the federation are still battling to pay cannot afford the basic grocery needs of average family. According to Averett and Stifle (2007) who study the effect of children over and underweight on the cognitive functioning find that malnourished children tends to have lower cognitive abilities when compared to well nourished. Children who do not get enough to eat are likely to suffer from stunted growth and hindered mental development. Studies have shown that food insufficiency is a serious problem affecting children's ability to learn. And that offering a healthy breakfast is an effective measure to improve academic performance and cognitive functioning among undernourished population.

In 1990s when 50% of children who enrolled in the first grade s of elementary school failed over the country in Brazil the studies of Riberiro (1991 & 1993) showed that the poor academic performance of lower classes children resulted from deficiencies in their bio psychosocial development. Further the study revealed that the lower classes children fail in school because they have cognitive deficit, motor perceptive and emotional development delay deficiencies among others. The problem was deduced to incorrect eating habits, and existence of eating patterns, the lack of care by mother or neglect in the children feeding. In other words, malnutrition was the cause of poor academic performance in response to this development the government introduced in-school feeding to help reduced the problem of the children from the poor family.

In Nigeria poor academic performances of students have been repeatedly reported not to shown significant improvement by National Examination Council (NECO) and West African examination council (WAEC). The probe of this study therefore is to determine the level of malnutrition of students in schools in Esan west local government area of Edo State.

Research Questions

The overall aim of this study is to find out the level of malnutrition of students in the study area. To achieve this, the following questions were answered

a. What is the level of malnutrition of students at the primary and secondary schools in the study area?
b. Does malnutrition differs between male and female students in the study area?
c. Does malnutrition differs across type of school (private and public)?
d. What age of children suffers malnutrition most?

Hypotheses

The following hypotheses (Ho) were stated and tested in

Table 1 Average mean difference in the level of malnutrition in primary schools

School	Male	Female	X^2cal	X^2crit	Remarks
Private	36.96 36.04	30.44 31.36	12.58	3.91	significant
Public	54.98 55.90	49.55 30.13			
Total	91.94	79.99			

Source; field study

Table 2 Average mean difference in the level of malnutrition in junior secondary schools

School	Male	Female	X^2cal	X^2crit	Remarks
Private	51.97 55.05	51.43 48.35	0.674	3.91	not significant
Public	78.03 74.53	62.77 65.85			
Total	91.94	79.99			

Source; field study

the study.

The level of malnutrition of students in schools in Esan West Local Government Area is not significantly high.

The male students suffering from malnutrition do not significantly differ with the female students.

Students in private/public primary and secondary schools do not significantly differ in the level of malnourishment.

Students suffering from malnourishment do differ across age

Significance of the Study

The findings from this study will benefit parents, the school administrators and the government/ employers of labour. To the parent the result will reveal the level of malnourishment. The school administrators will appreciate the level of malnourished students. This will help in checking unnecessary academic demand on the students. To the government and employer of labour, the need to revisit to issue of salary and wages of workers becomes paramount to meet the basic need of the family.

Research Method

The study employed the descriptive research design to ascertain the current level of malnutrition in primary and secondary schools in the study area. The population comprised of forty nine schools (49) with students population of six thousand nine hundred and nine students (6909) out of which a sample of size of six schools (6) and students sample of five hundred (500) were selected. According to Aigbomian and Momoh (2004) when a population has similar characteristics a sample ratio of 1:10 of a population below 10,000 is appropriate.

A questionnaire titled Level of Malnutrition (LM) designed by the researcher was administered to the sample size of 500 students to ascertain the weight of each subject compared with expected weight of his or her age to determine the level of malnutrition in selected primary and secondary schools in Esan local government area of Edo state Nigeria. Data generated were analysed using chi-square, simple percentage on the hypotheses.

PRESENTATION AND DISCUSSION OF RESULTS

Hypothesis 1

This hypothesis that the level of malnutrition will not be significant to determine the Level of malnutrition of students in the study area, this was achieved by comparing the expected weight and observed weights of students to arrive at the percentage level of differences in weight of the sampled subjects. See table 1 below.

From Table 1 above, the mean average weight difference of pupils in primary schools ranges between 30.44 -54.98kg. The male pupils in public primary schools having 54.98kg weight differences as against their male counterpart in private primary schools with 36.96kg. The difference when compared statistically is significant with calculated value of 12.58 as against critical table value of chi-square of 3.91. This result is further corroborated with mean weight difference of junior secondary schools in table 2

From Table 2 the level of malnutrition in junior secondary schools ranges between 51.43-78.03kg. The students in public junior secondary schools showing higher mean weight differences than those students in

Table 3 Observed and Actual mean weight of Respondents in Private primary Students

Age	Private Primary Schools						x_{cal}	x_{crit}	Rem
	Boys (Males)			Girls (Females)					
	Fo	Fe	Diff	Fo	Fe	Diff			
9	35	61.6	-26.26	34.4	63.8	-29.40			
10	34.60	70.4	-35.80	37	63.8	-33.4			
11	36.57	77.0	-40.43	50.67	79.2	-28.52	0.33	3.91	Not sign
12	40.00	85.0	-45.00	-	-	-			
Sum diff			-147.83	-	-	-91.32			
Mean Average weight			36.96			30.44			

Source; field study

Table 4 Observed and Actual mean weight of Respondents in Public primary Pry 5 Students

Age	Public Primary Schools						x_{cal}	x_{crit}	Rem
	Boys (Males)			Girls (Females)					
	Fo	Fe	Diff	Fo	Fe	Diff			
9	-	-	-	28.50	63	-35.3			
10	26.80	70.4	-43.60	30.50	70.4	-39.90			
11	26.40	77.0	-50.60	32.67	79.23	-46.53			
12	30.67	85	-54.33	36	95	-59	0.063	3.91	Not sign
13	30.33	85	-54.67	-	-	-			
14	34.33	105	-70.67	38	105	-67			
15	49	105	-56						
Total			-329.87			-247.73			
Mean weight			54.98			49.55			

Source; field study

Table 5 Observed and Actual mean weight of Respondents in Private Junior Secondary School III Students

Age	Private Junior Secondary Schools III						x_{cal}	x_{crit}	Rem
	Boys (Males)			Girls (Females)					
	Fo	Fe	Diff	Fo	Fe	Diff			
12	42.57	85	-42.43	47.10	95	-47.9			
13	54.00	85	-31.00	45.88	95	-49.12			
14	55	105	-50	64.00	105	-41.00			
15	59.60	105	-45.40	55.80	105	-49.20	0.063	3.91	Not sign
16	59	150	-91	53.67	115	-61.33			
17	-	-	-	70	130	-60			
Sum diff			-259.83			-308.55			
Mean diff			51.97			51.43			

Source; from field study

private schools. However within the secondary school the mean weight difference is not significant with calculated value of 0.674 as against 3.91 critical chi-table values. Still when both males in the two levels of schools and their female weight differences was determine it was revealed that the result is not significant

Hypothesis 2

This hypothesis states that malnutrition do not significantly differs between male and female students in primary and secondary schools in the study area. See table 3

From Table 3 above it is evidently clear that there is a significant difference in the actual and expected weight of students of age 9-12 in primary 5 in the study area. The mean weight of male at 36.96 as against the female 30.40 However the difference is not statistically significant, with calculated x^2 value of 0.33 as against 3.91 critical table values. This result revealed that at the primary school level the male pupils (boys) are more malnourished than the females (girls) in the study area. This is further corroborated with the findings in public schools in table 4.

Table 6 Observed and Actual mean weight of Respondents in Public Junior Secondary School III Students

Age	Public Junior Secondary Schools						x_{cal}	x_{crit}	Remk
	Boys (Males)			Girls (Females)					
	Fo	Fe	Diff	Fo	Fe	Diff			
16	67.50	130	-62.50	54.91	115	-60.09	1.657	3.91	Not sign
17	60	130	-70	57.45	115	-57.55			
18	57	150	-89.62	54.33	125	-70.67			
19	60	150	-90	-	-	-			
Sum diff			312			188.31			
Mean diff			78.03			62.77			

Source; field study

Table 4 above revealed that there is a negative difference in the weight of students in public primary schools in the study area between observed and expected weight, however between the male and female students in same school there was no significant difference in weight, with calculated chi square value of 0.063 as against 3.91 showing that both male and female students were malnourished, but the males (boys) suffering more malnourishment than the female pupils..

From table 5 above difference exist between the observed and expected weight of respondents. However the difference in the level of nourishment between the male and female in same class is not statistically significant with a calculated chi square value of 0.063 as against 3.91 critical table value.

From Table 6 above it was revealed that similar differences exist between the observed and expected weights of students, public junior sec schools showing that malnourishment exist across the level of schools. And though within school and class there seem to be no significant difference showing that both sexes are malnourished. Between schools there revealed a significance in the level of malnourishment. Malnourishment is also seen to be progressive in all cases with age the older the higher the level of malnourishment.

SUMMARY

Arising from the data analysis from this study, evidences show that the levels of malnourishment range between 30-55% in private primary schools 49.55-54.98 in public schools. The differences between these two types of schools are significant. However within school no significant difference seen, but when compared between schools evidence shows that there is a significant difference. The male students suffers more than the females.

CONCLUSION

Nigerian children are highly malnourished the male students /pupils in public schools suffer more malnourishment than their counterpart in private schools. The male students also suffer more malnourishment. Therefore the implications of this result on the academic performance will be far reaching and calls for urgent stride to curb the source of funding/salary wages of parents to carter for these children.

RECOMMENDATIONS

Introduce in-school feeding in all schools
Improve salary and wages of workers

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